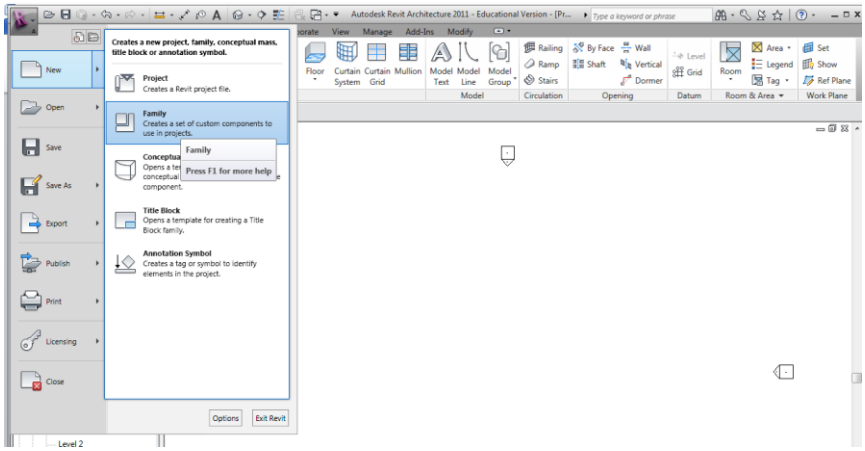
Making a Generic Door in Revit; which can open and close

(The same process can be used to make a window)

First click the file button in the top left hand corner

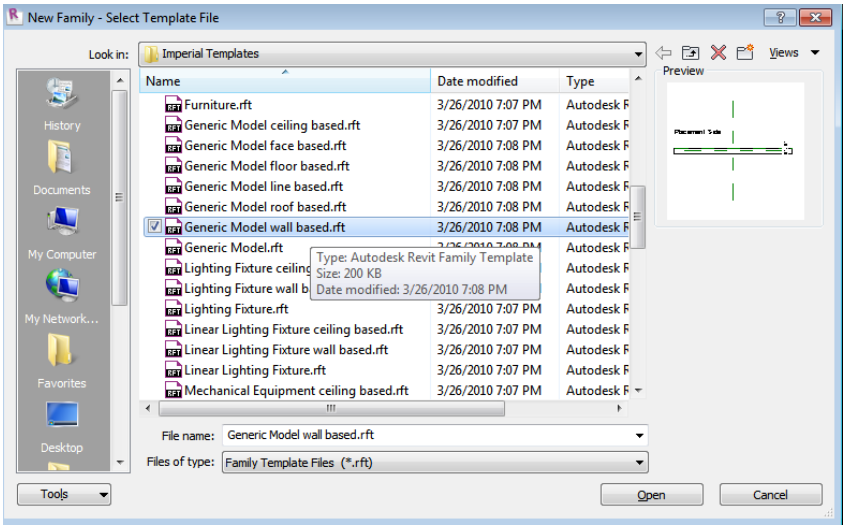
Scroll down to **"New"**

Scroll over to **"New Family"**

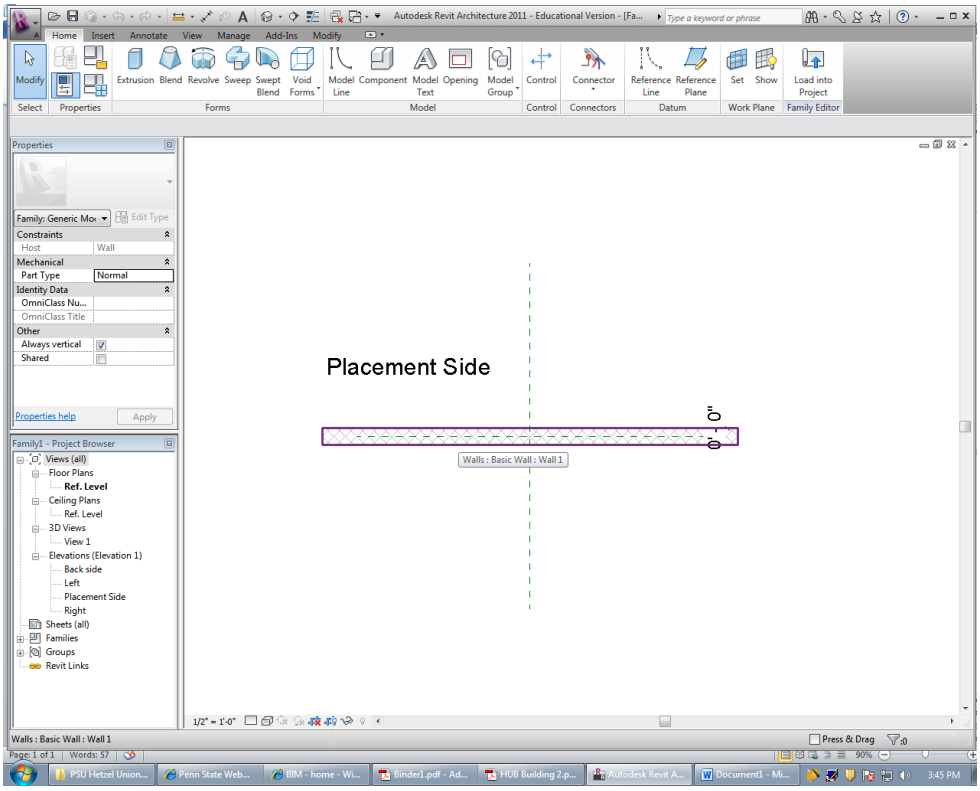


The following dialog box will appear

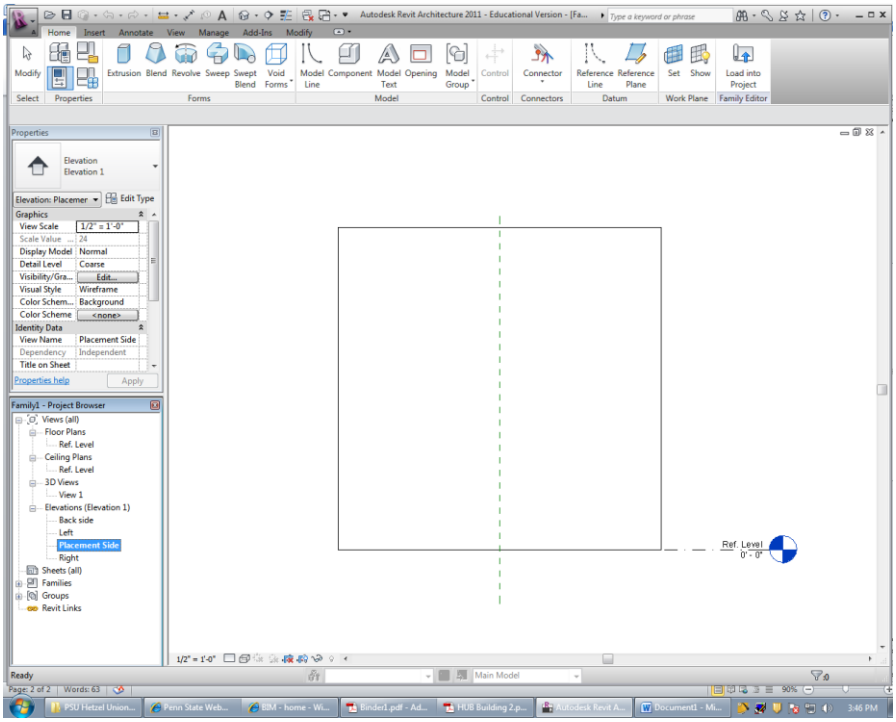
Scroll down to **"Generic Model Wall Based"** and click **open**



Your screen should look as follows

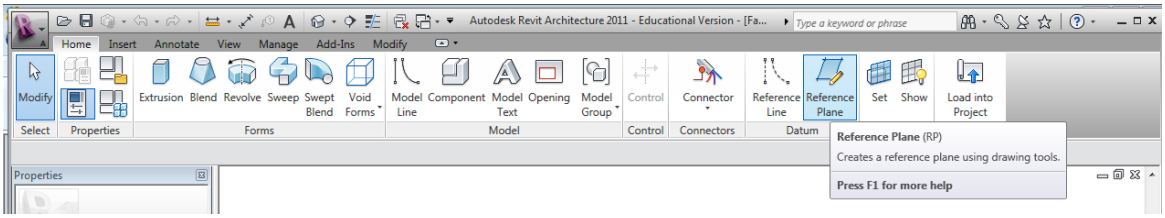


Click on the “**Placement Side Elevation**” as you see I have done, it is highlighted in blue

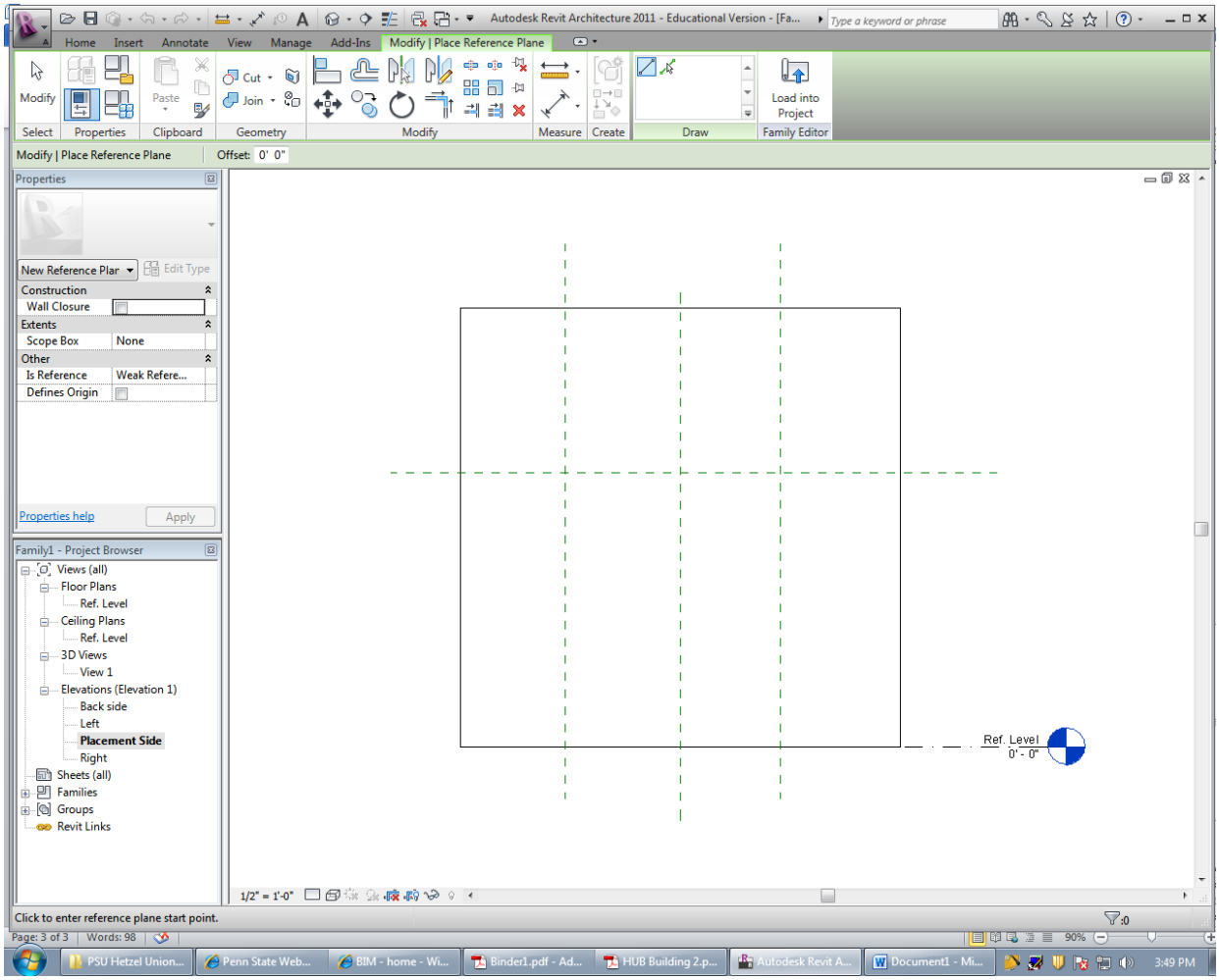


Now we must make the opening in our wall

Click the **“Reference Plane”** button under the Home tab

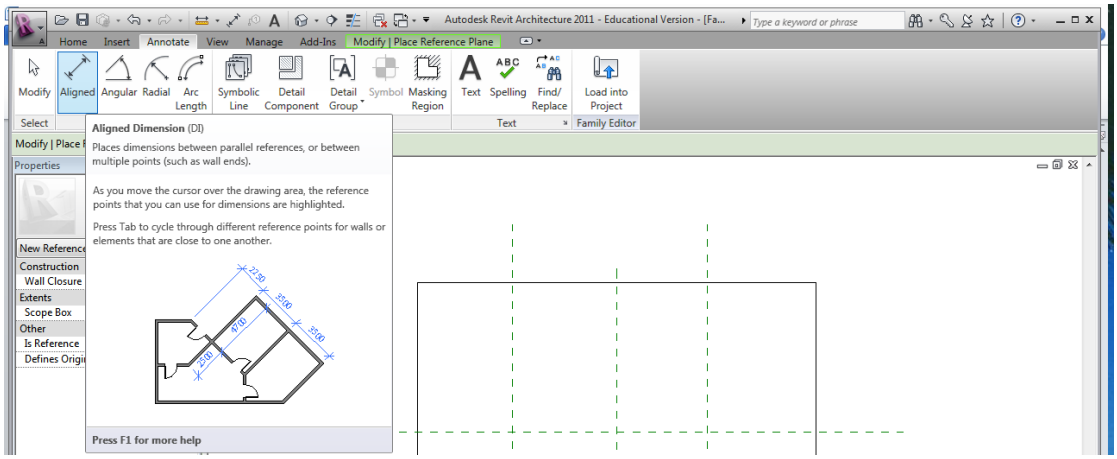


Draw **3** Reference Planes on your wall like I have done in the following picture



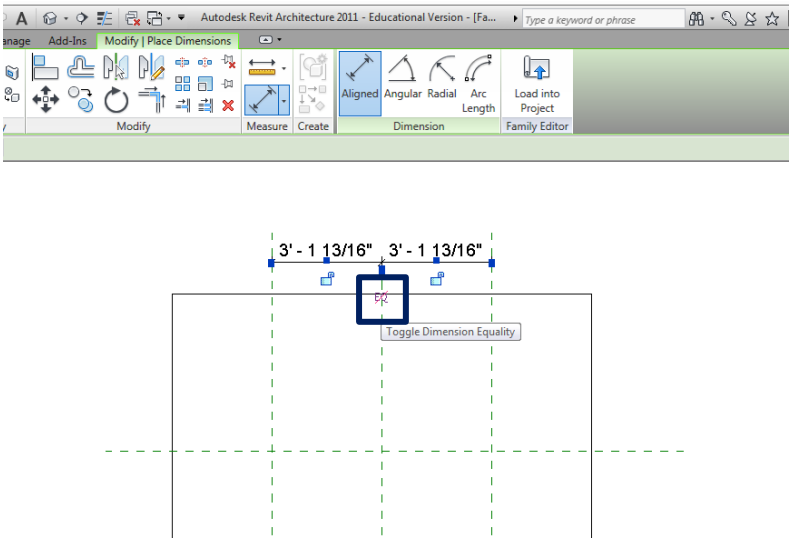
Now we must dimension these reference lines

Click the **“aligned dimension”** button under the annotate tab

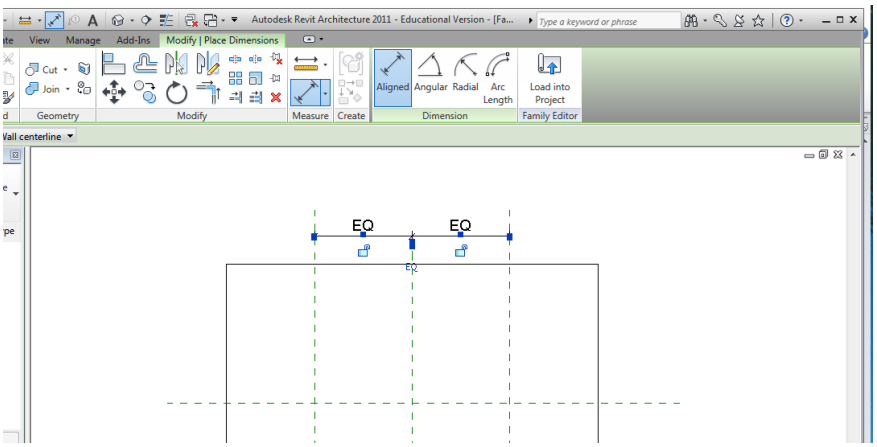


Click on the left, middle, then right reference plane in that order.

Drag the dimension up and click to activate it

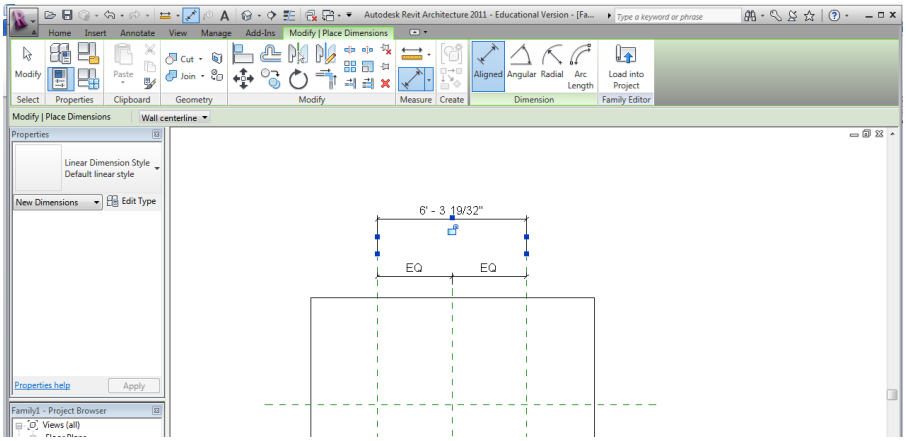


Now click the **“EQ”** with a slash through it to make the two sides have equal dimensions



Now do an overall width dimension

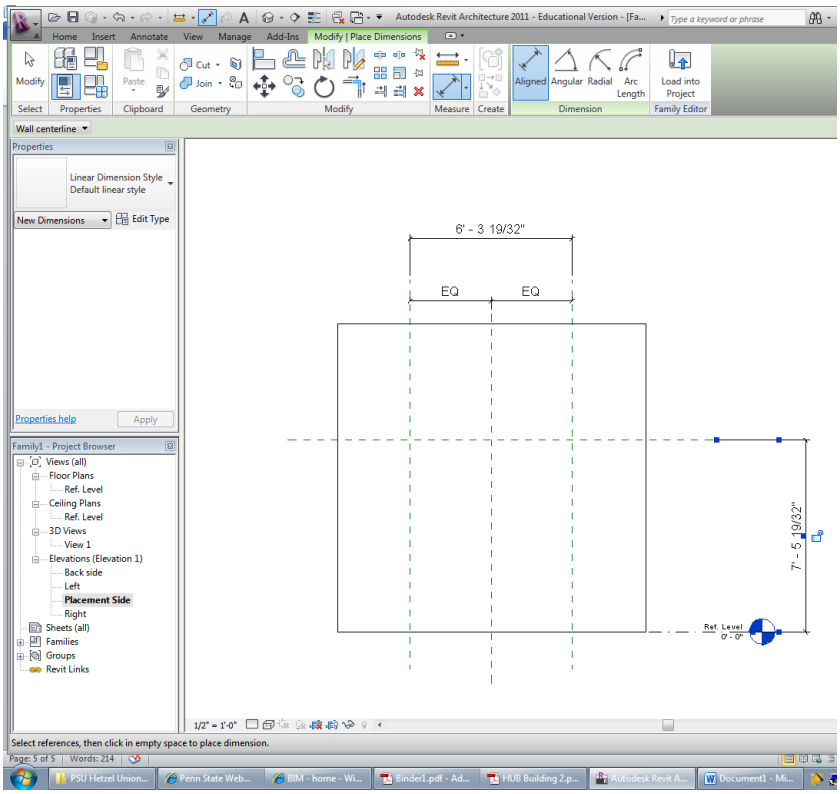
Click the left then the right reference line and drag the dimension up and click



Do the same thing for the height

Click the **“aligned dimension”** button

Click the bottom reference plane and then the top reference plane and drag to the right and click

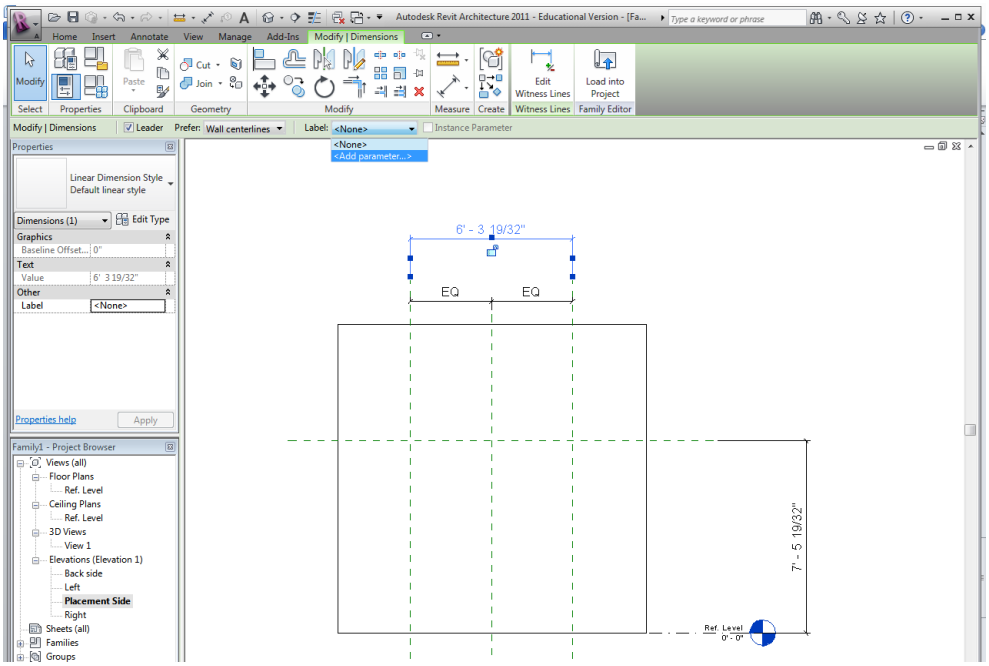


Now we can make parameters

Click on the overall width dimension

A green toolbar will appear

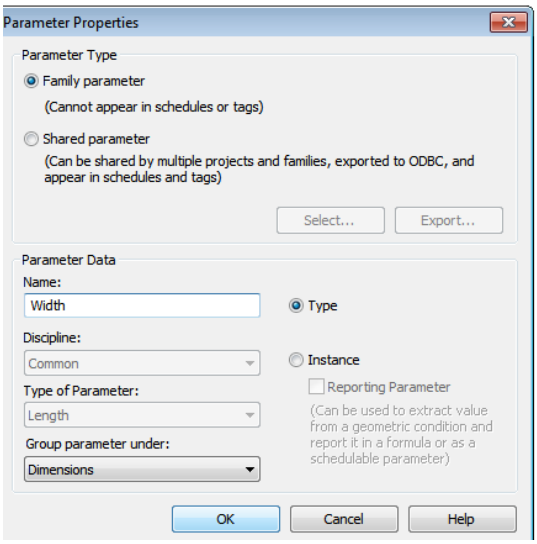
Drag the label button down and click **“Add Parameter”**



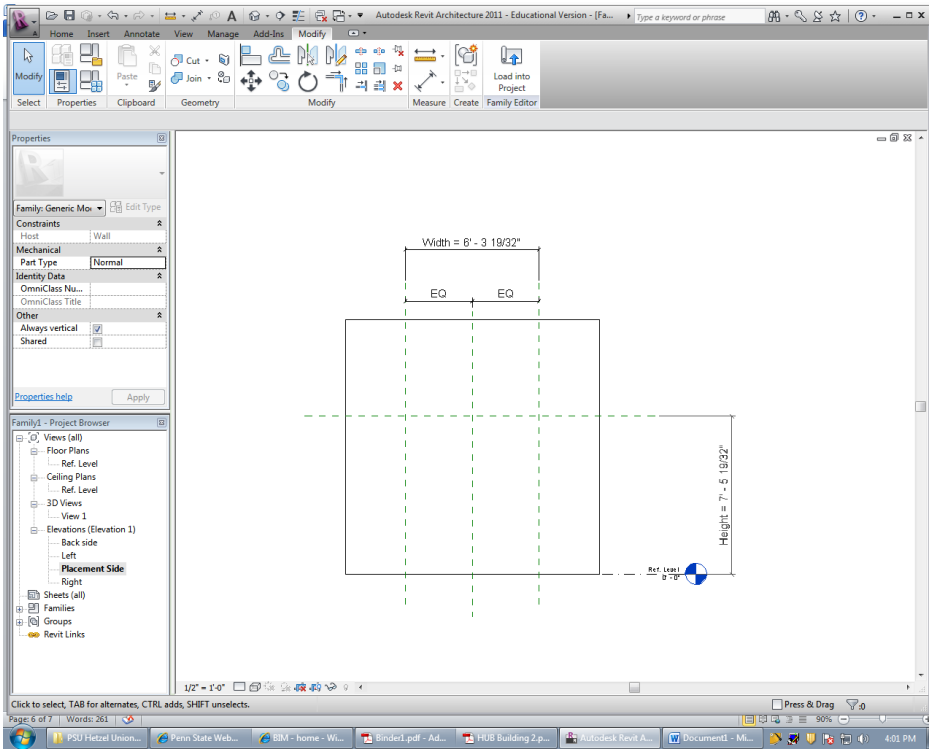
The following dialog box will appear

Give the parameter a name, such as width

The same should be done for the height

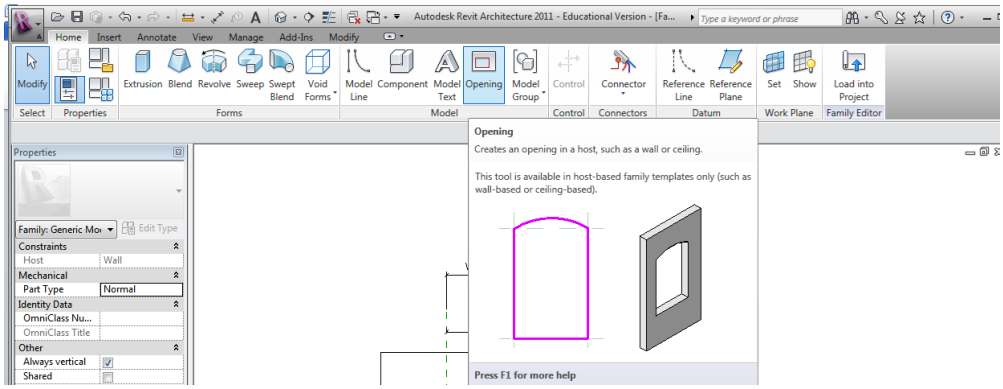


Your screen should look similar to the following



Now we need to make an opening in our wall

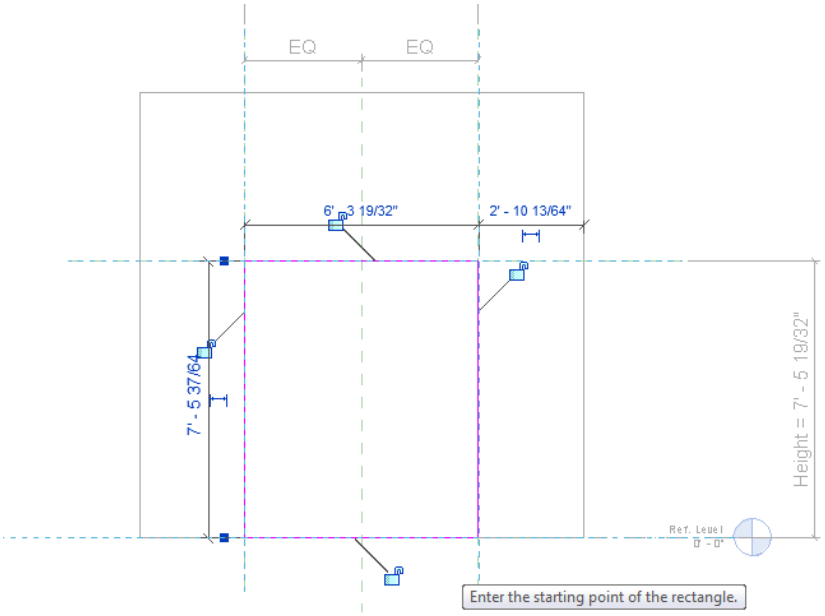
Click the **“opening”** button under the home tab

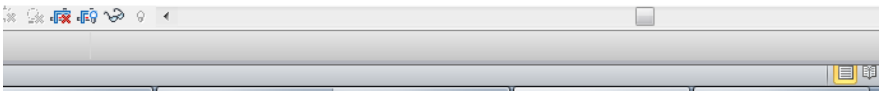


Now we must draw our opening on our wall

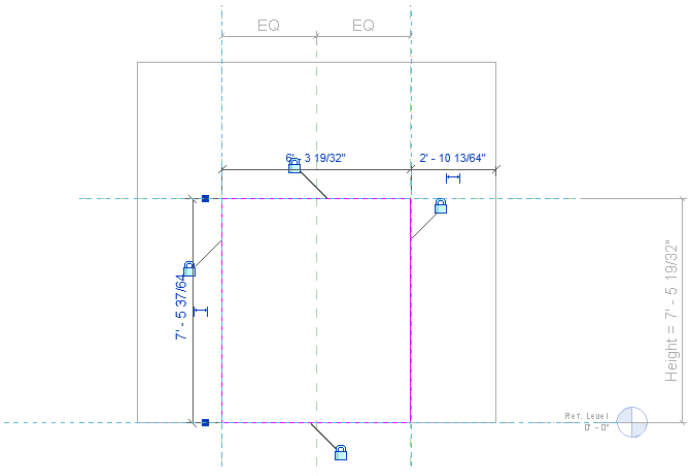
We want to attach the lines of the opening to the reference planes

This is done so that if we change one of the dimension parameters the opening in the wall will change with it

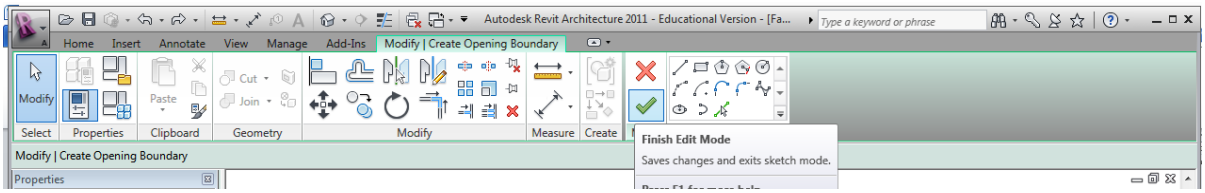




Lock all the opening lines to the reference planes

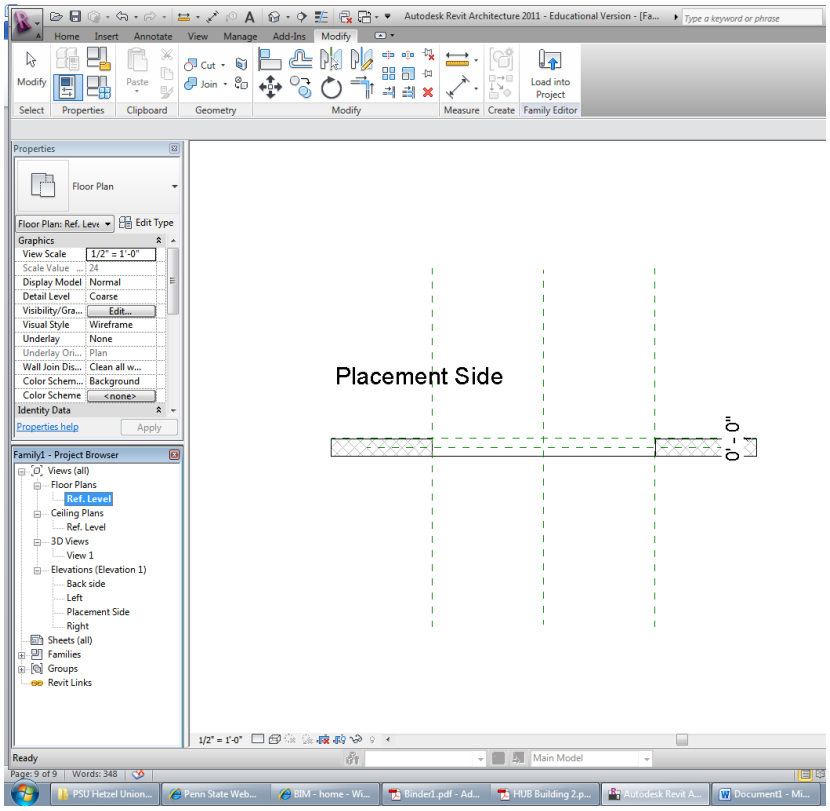


Click the **“green checkmark”** to finish the opening

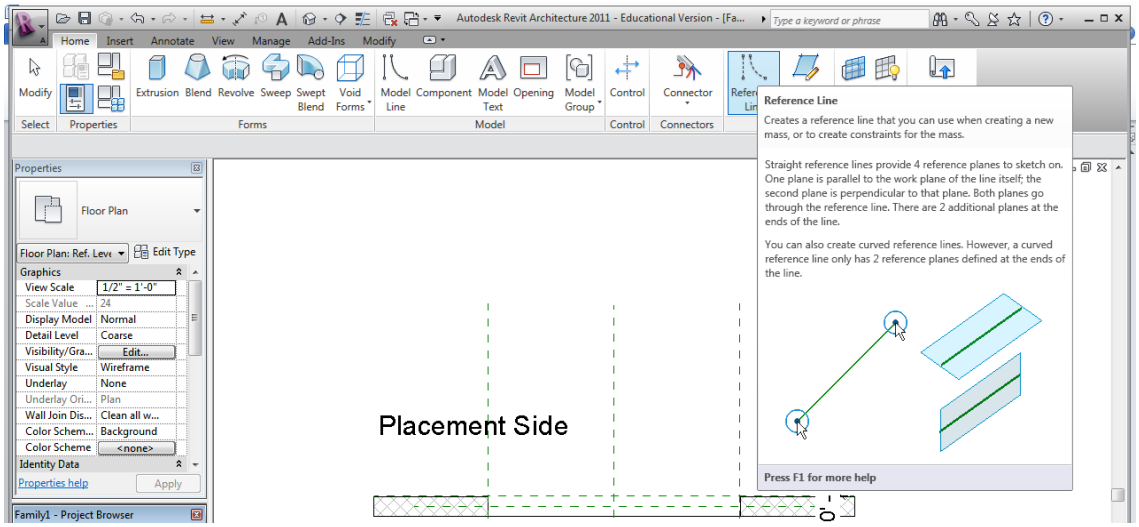


Now to make the door

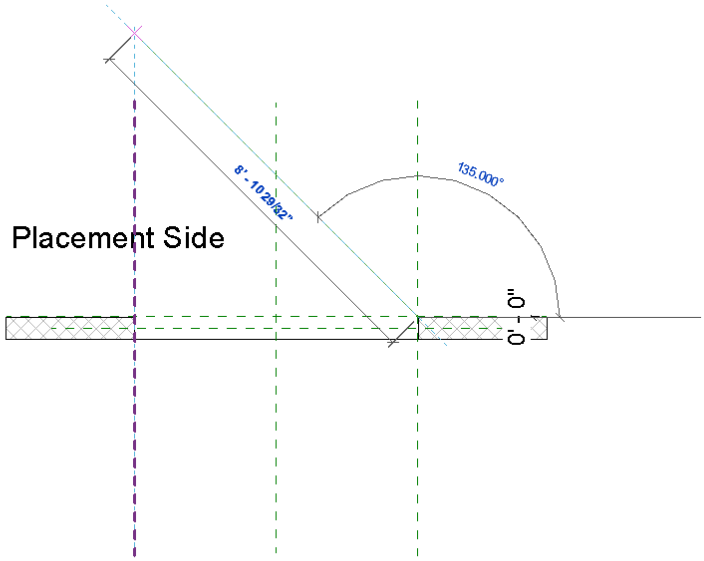
Click on the reference plan, as you can see highlighted in blue



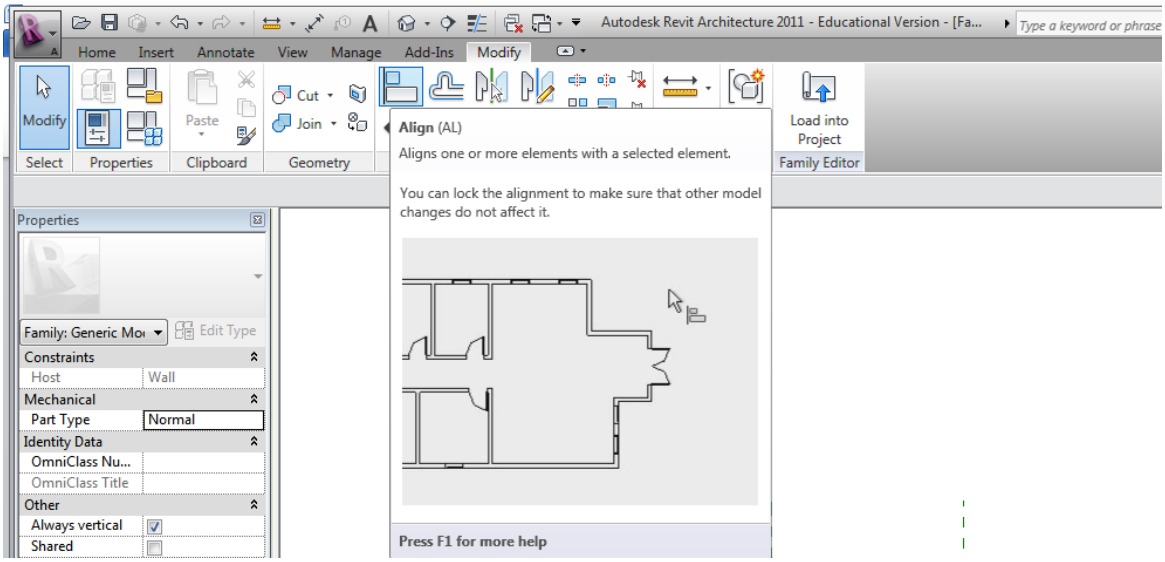
Click the **“reference line”** button under the home tab



Draw a reference line from a corner of your wall out at an angle like I did in the following image

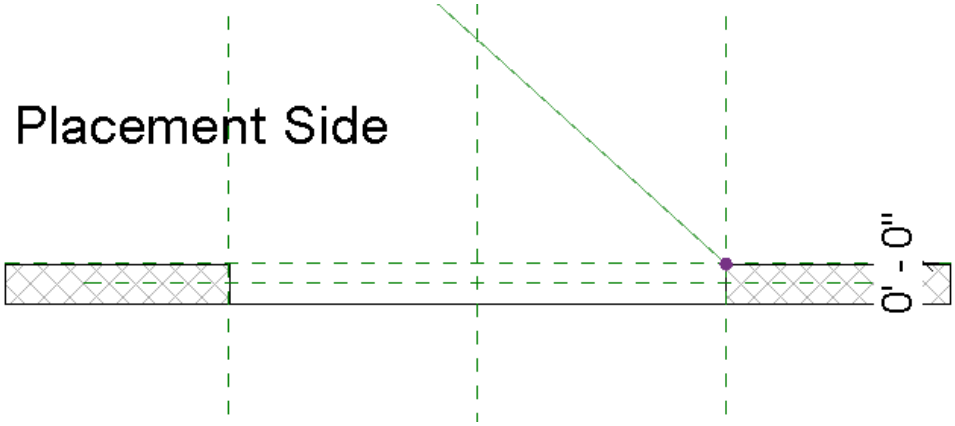


Click the **“align”** button under the home tab

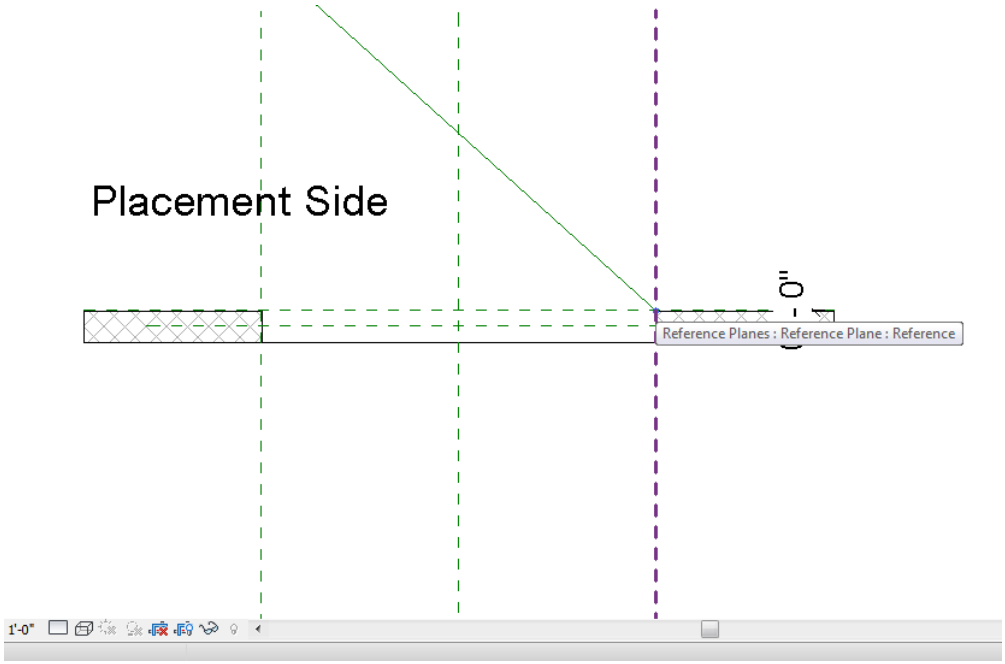


Hold your mouse over the intersection of your reference line and the corner of the wall till you can click the very corner of the reference line

Click the dot

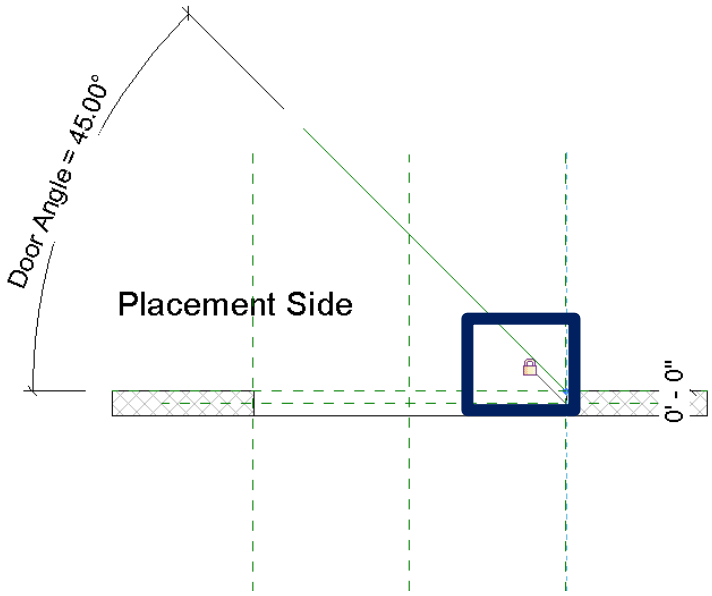


Now hold your clicker over the right hand reference plane and click it

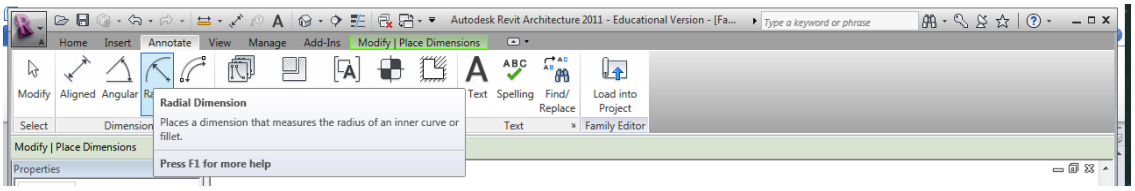


Your reference line is now locked to the wall

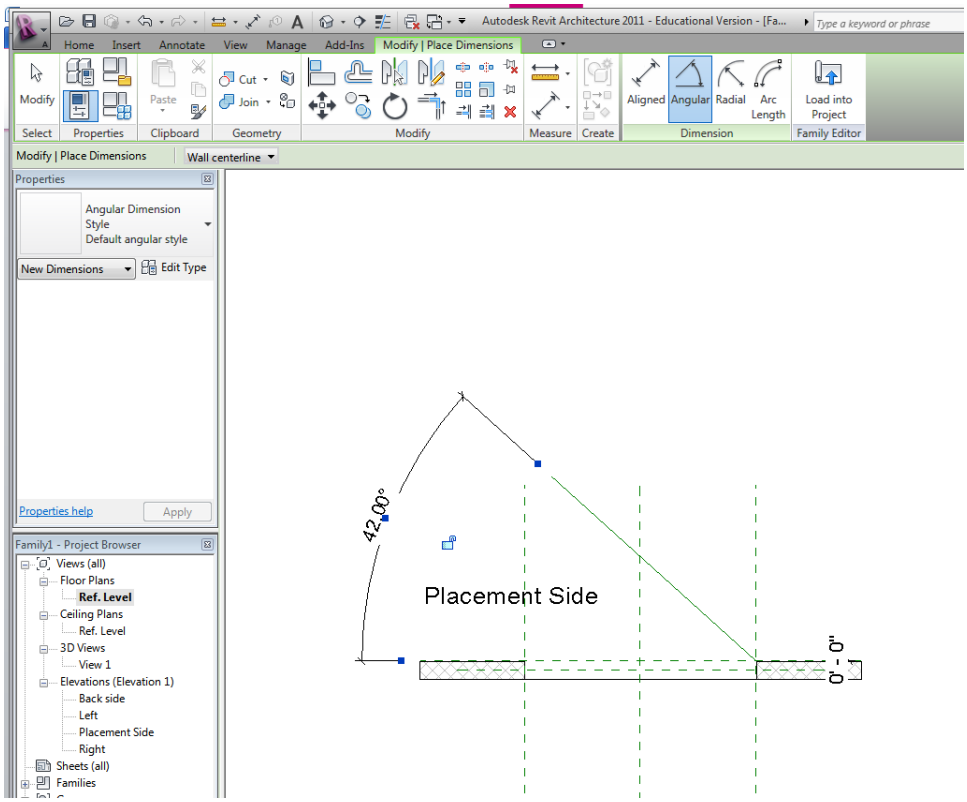
Make sure to lock the reference line to the reference plane



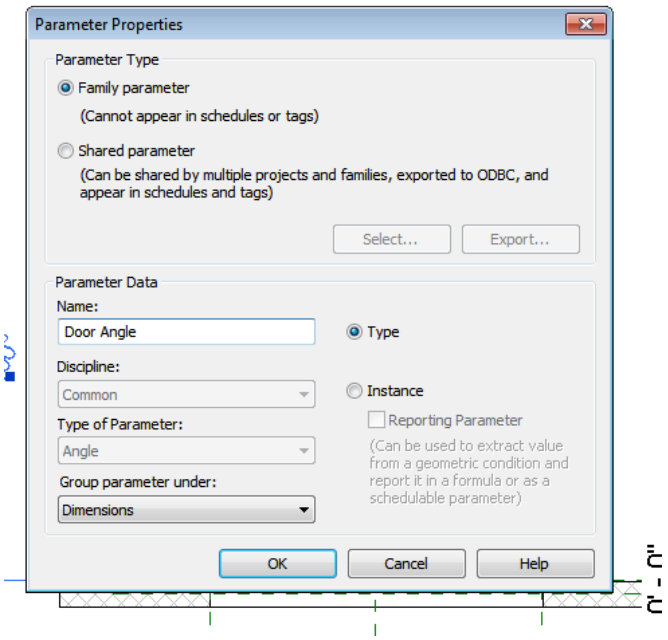
Click the **“angular dimension”** button under the annotate tab

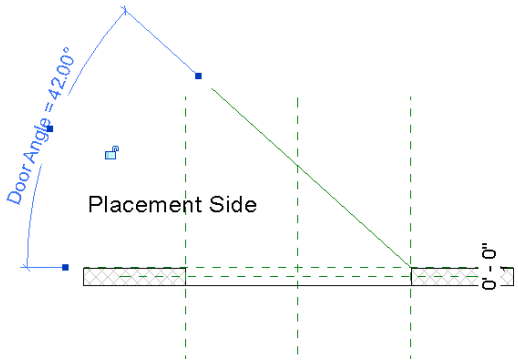


Click the reference line and reference plane that will allow you to dimension the angle

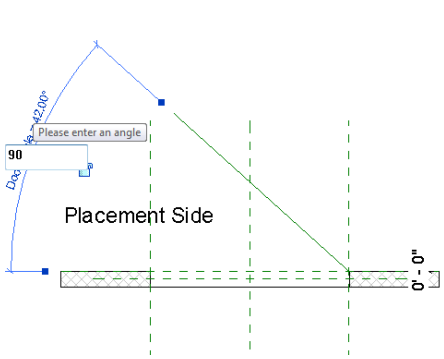


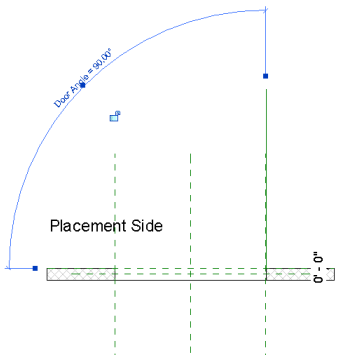
Give the angular dimension a parameter like we did before


Parameter Properties
Parameter Type
Family parameter
(Cannot appear in schedules or tags)
Shared parameter
(Can be shared by multiple projects and families, exported to ODBC, and appear in schedules and tags)
Select...
Export...
Parameter Data
Name:
Door Angle
Type
Discipline:
Common
Instance
Type of Parameter:
Angle
Reporting Parameter
(Can be used to extract value from a geometric condition and report it in a formula or as a schedulable parameter)
Group parameter under:
Dimensions
OK
Cancel
Help
0' - 0"

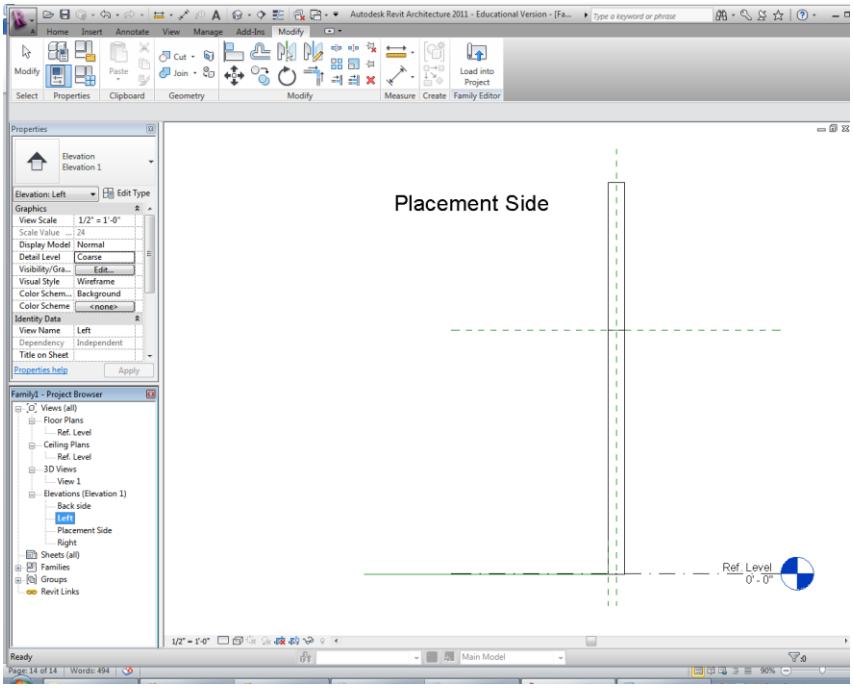

Door Angle = 42.00°
Placement Side
0' - 0"

Change the angle and change it to 90 degrees



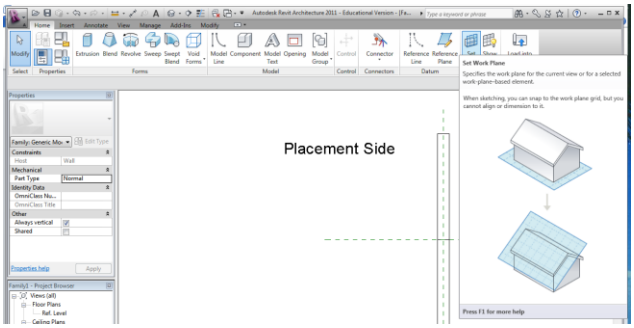


Click the left elevation now

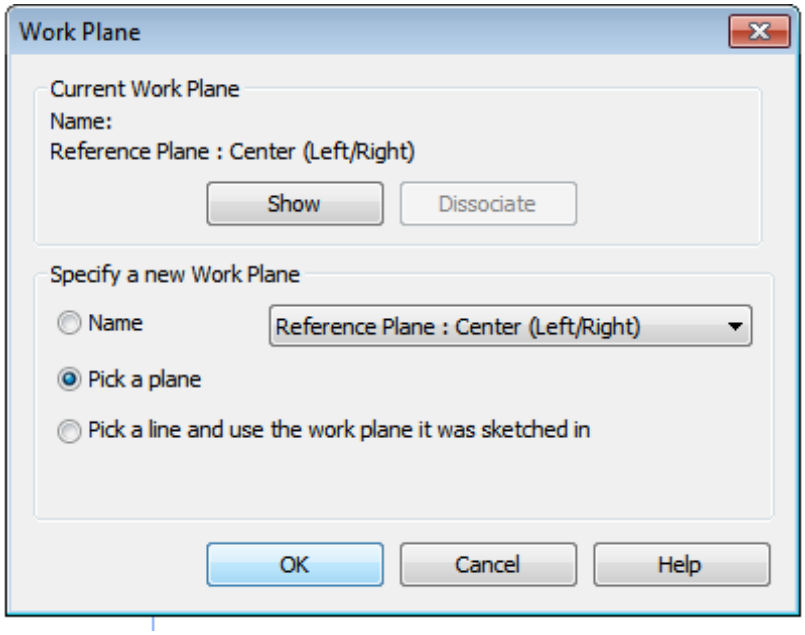


Now we must set our set the reference line to our work plane

Click set reference plane under the home tab

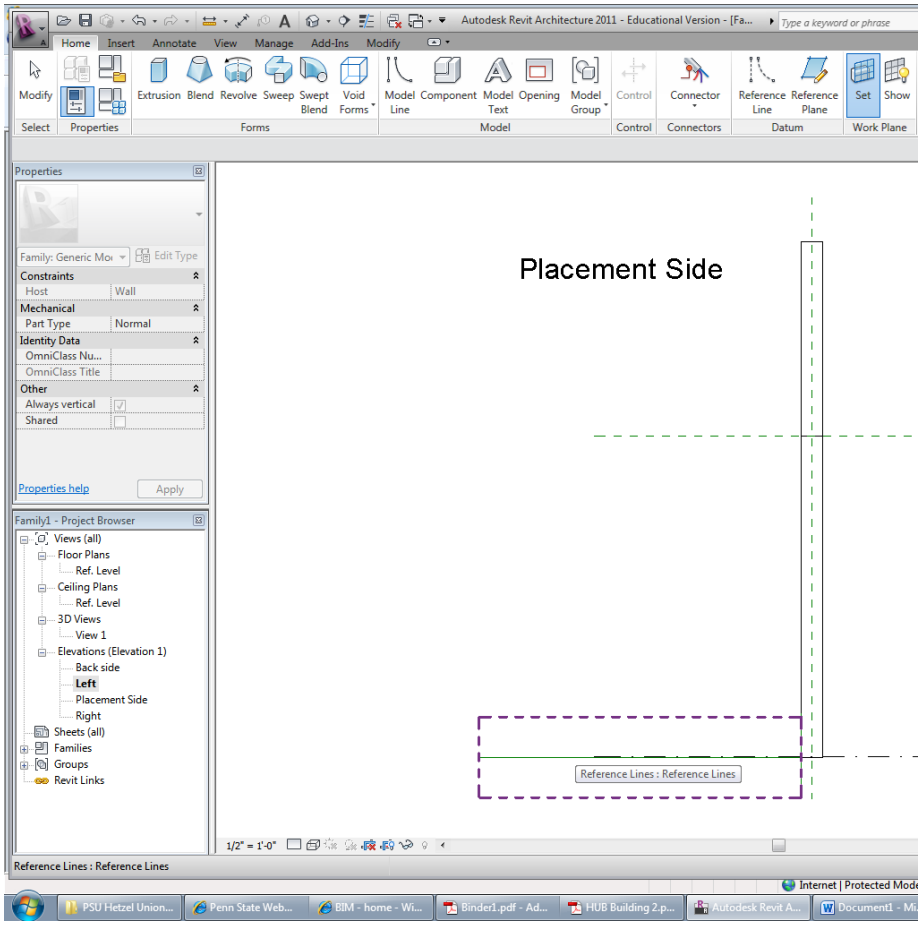


Click **“pick a plane”** and click OK

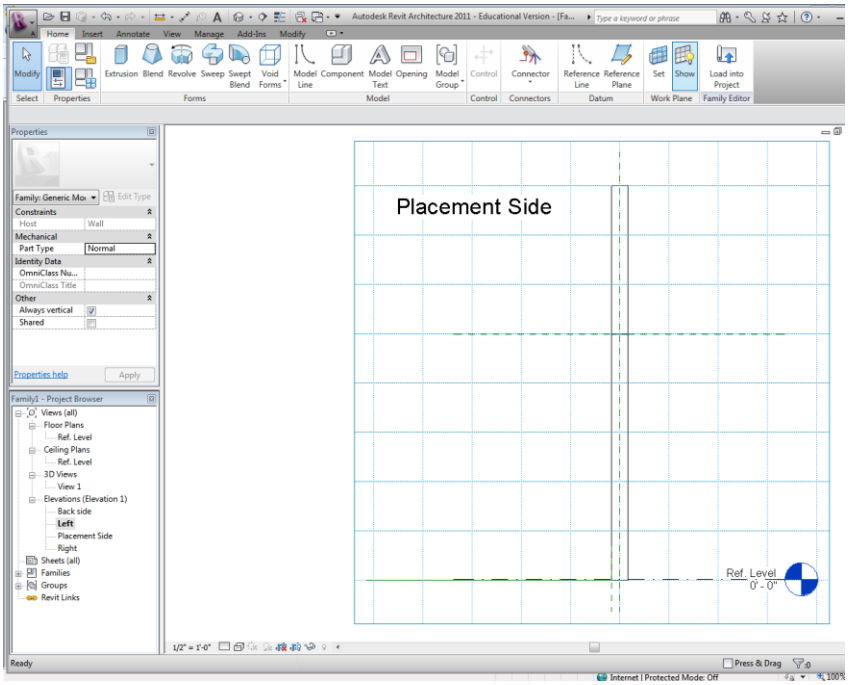


Hold your curser over the reference line we previously drew

Hit tab until it the plane parallel to the screen is the reference plane we want

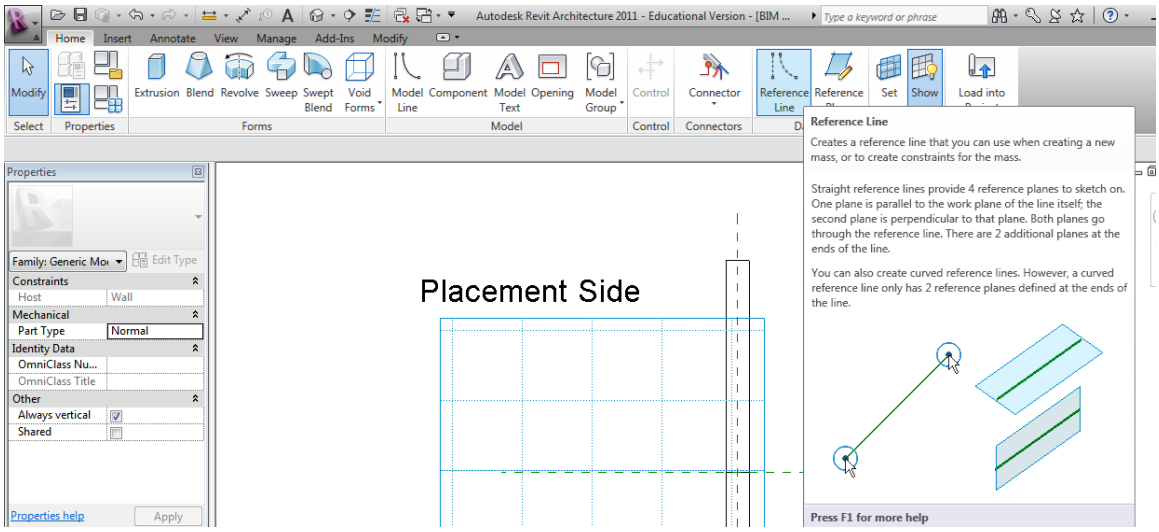


Click **“show reference plane”** under the home tab



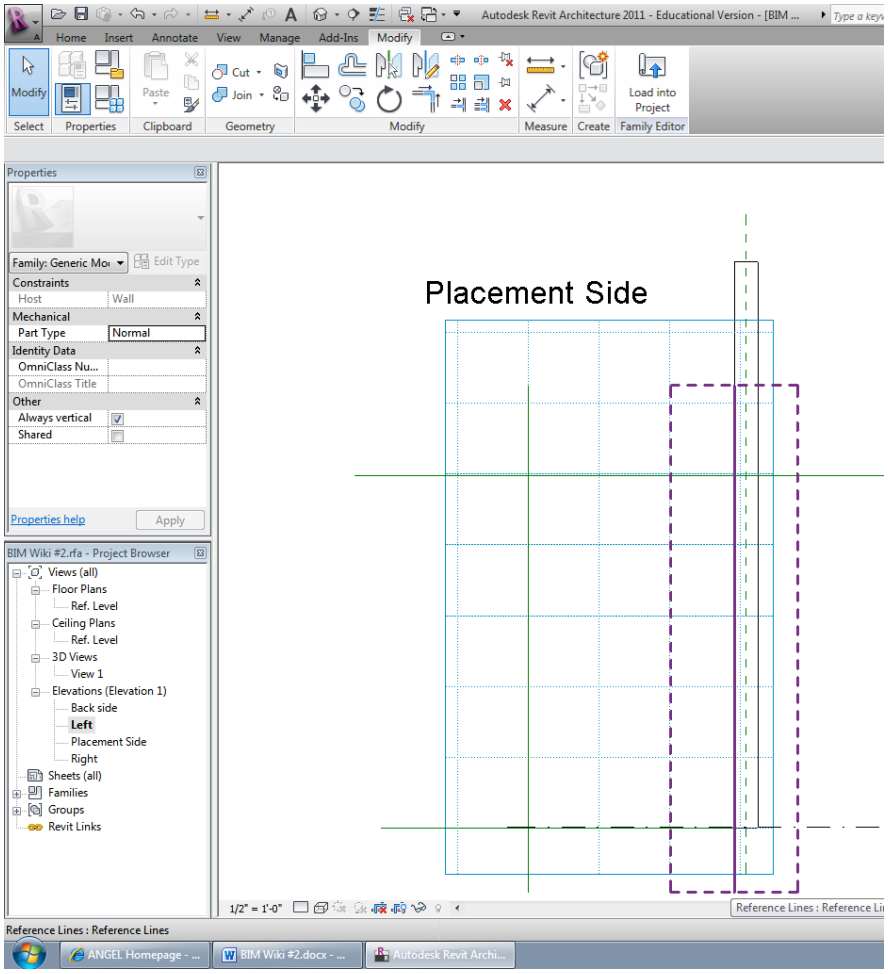
The reference line we previously drew is now our work plane

Click the **“reference line”** button under the home tab



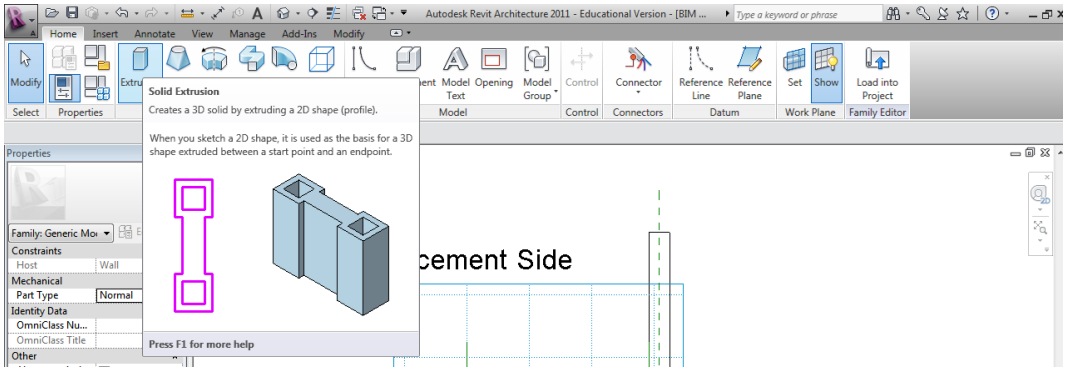
Draw 3 reference lines

One must be in the same place as the wall surface(I have this one glowing purple)

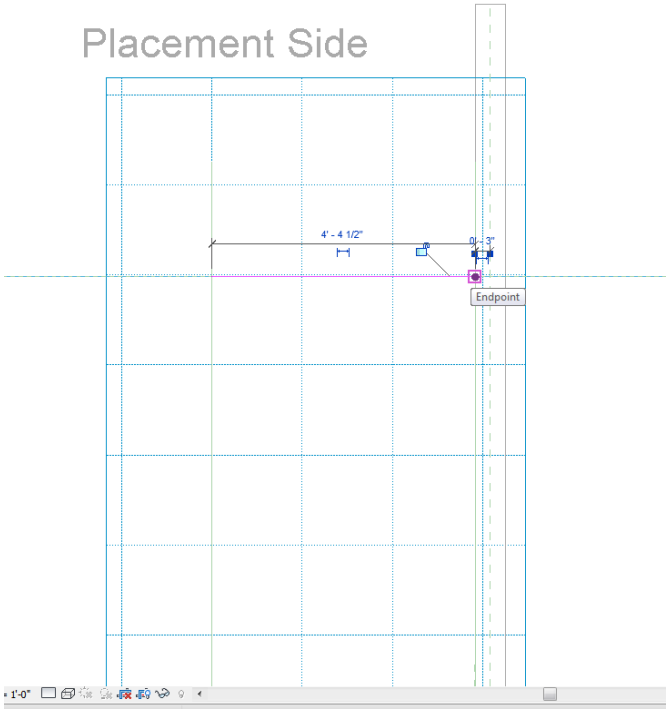


Now we must create a door which will be on this reference line

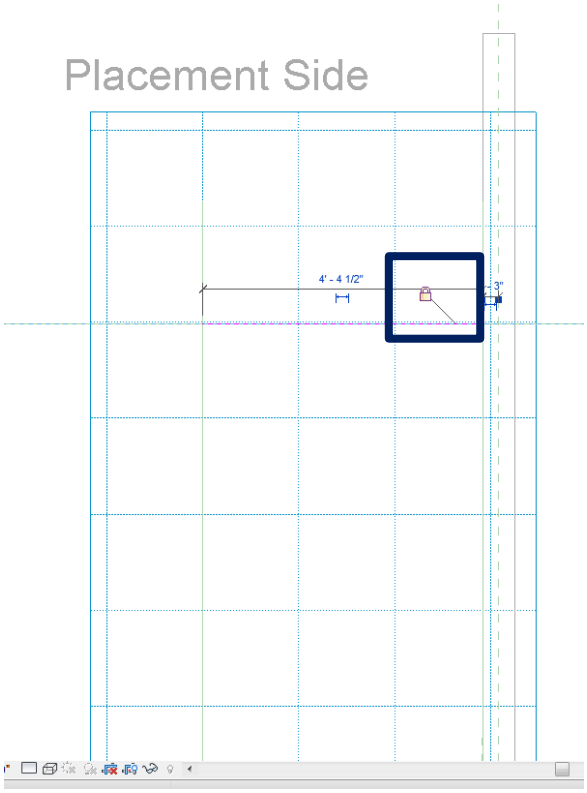
Click the **“extrusion button”** under the home tab



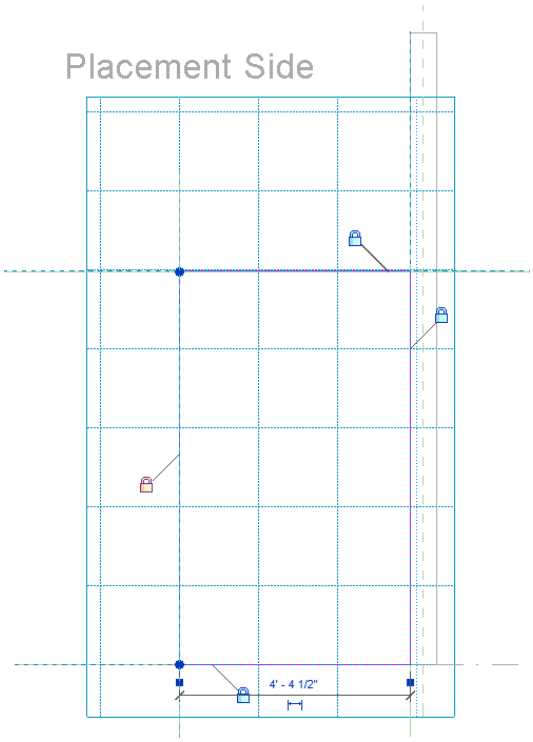
Draw an extrusion line over the reference lines we just drew



Make sure to lock each line as you draw them



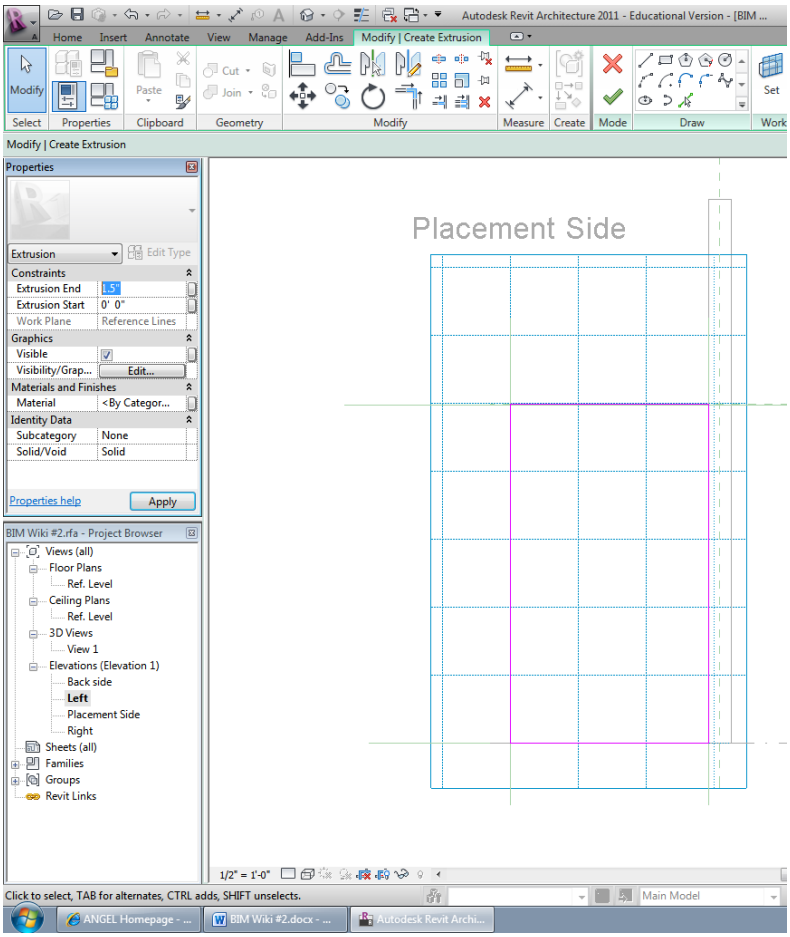
After doing this 4 times your screen should look like this



Click somewhere else on the screen

Click in the extrusion end box and set the thickness of your door

I made mine 1.5," this seems appropriate for a door thickness

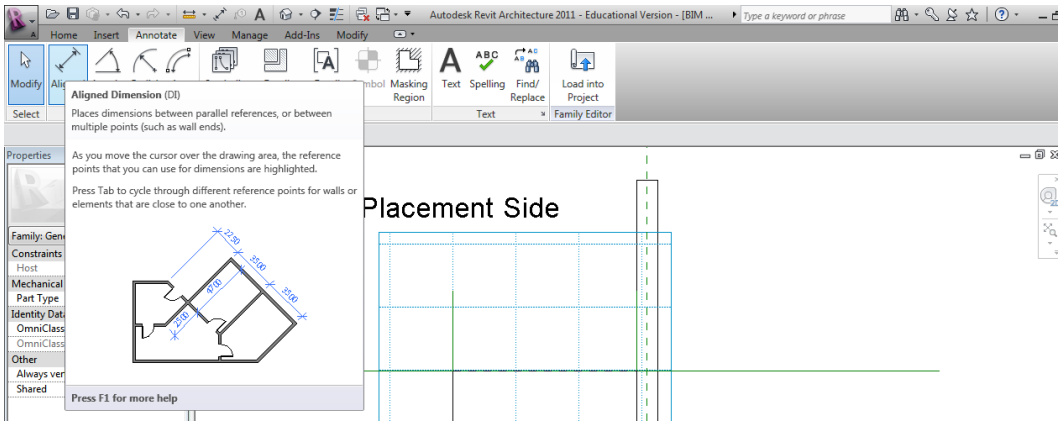


Under the same **"Properties"** box we can set materials or anything as needed

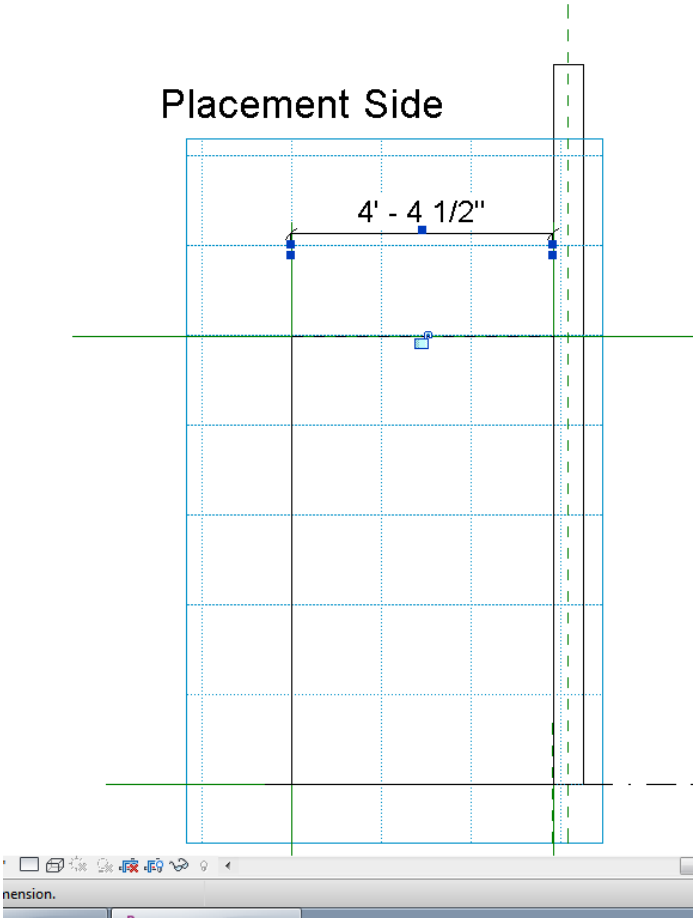
Click the green checkmark to end the extrusion

We now must give the reference lines we drew dimensions/parameters

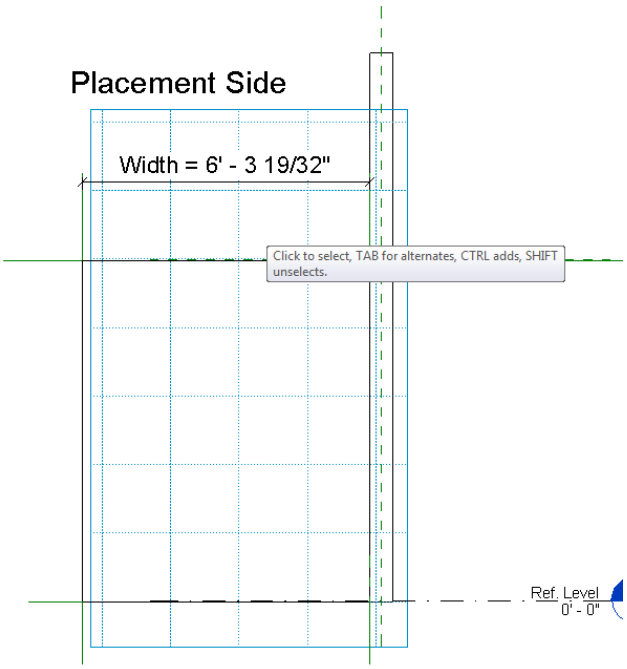
Click the **“aligned dimension”** button under the home tab



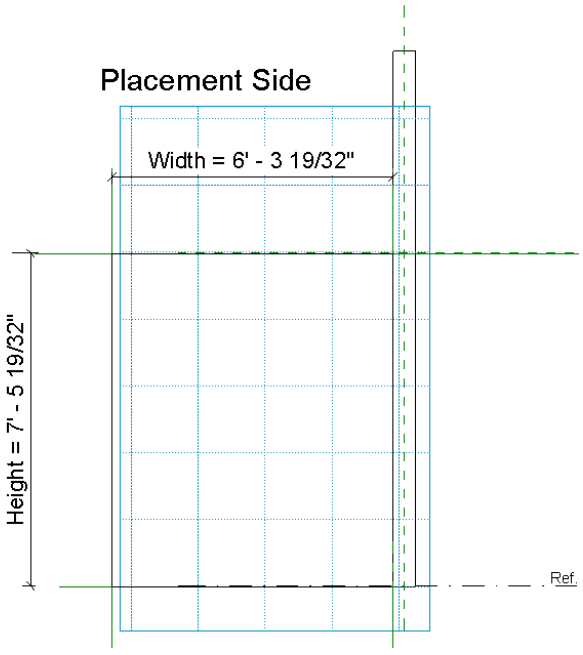
Click the left then the right reference line to make the width dimension



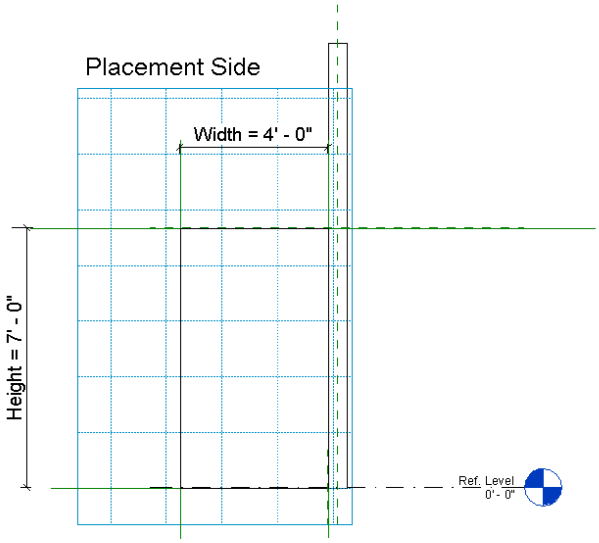
Set the width dimension just drawn to have a parameter like we did previously



Do the same for the height of the door

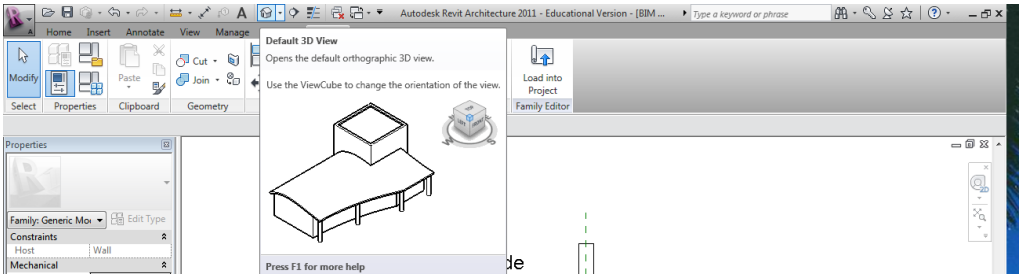


You can now set the width and height to any dimension you want

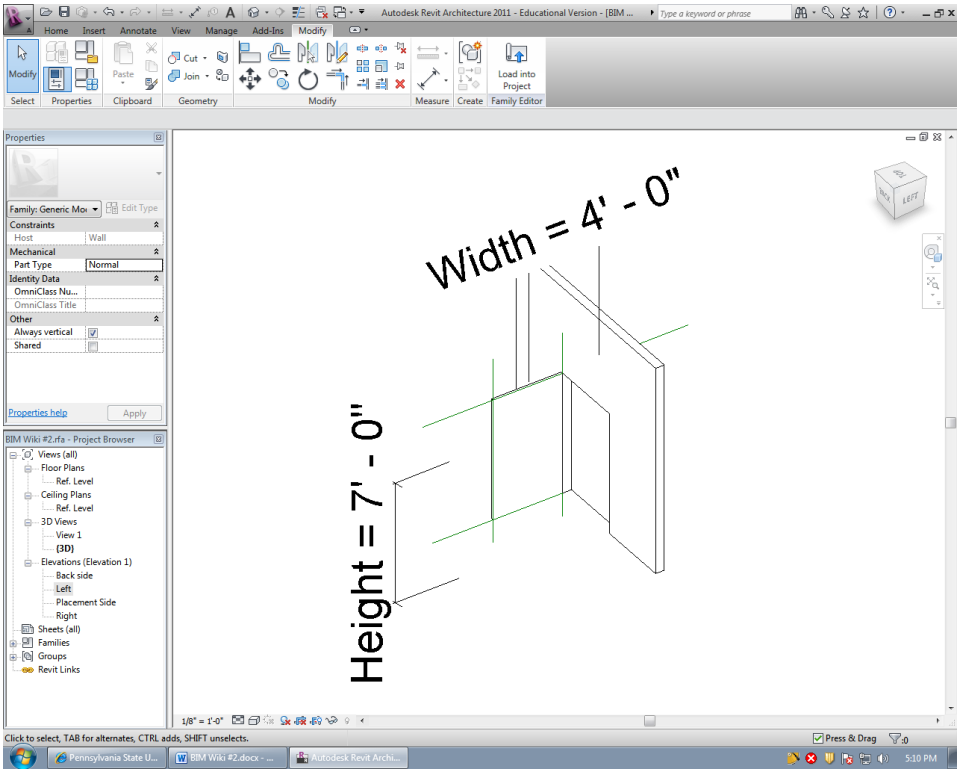


We can now verify that the door will open and close

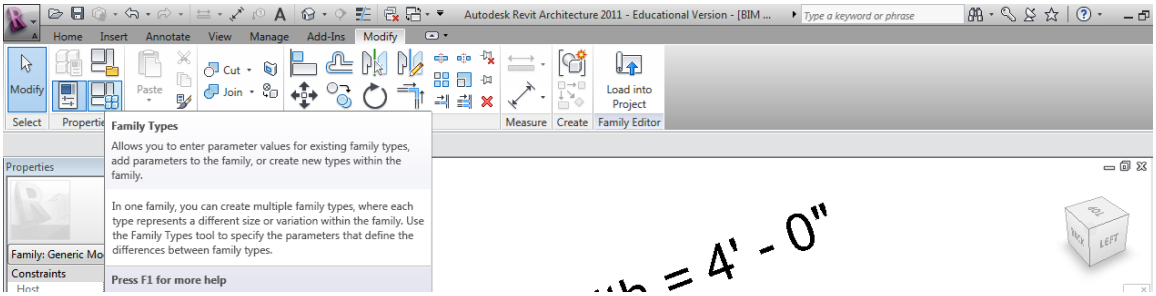
Click the **“3D view”** button on the top bar



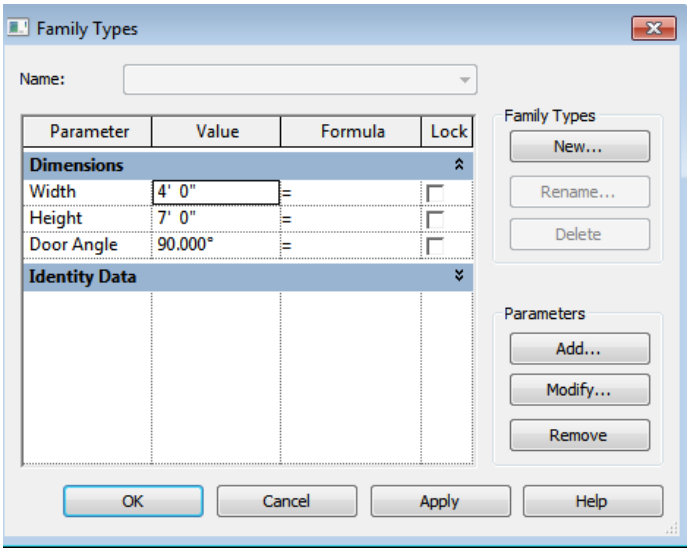
Orient yourself so you can see the door



Click the **“Family Types”** button under the home tab

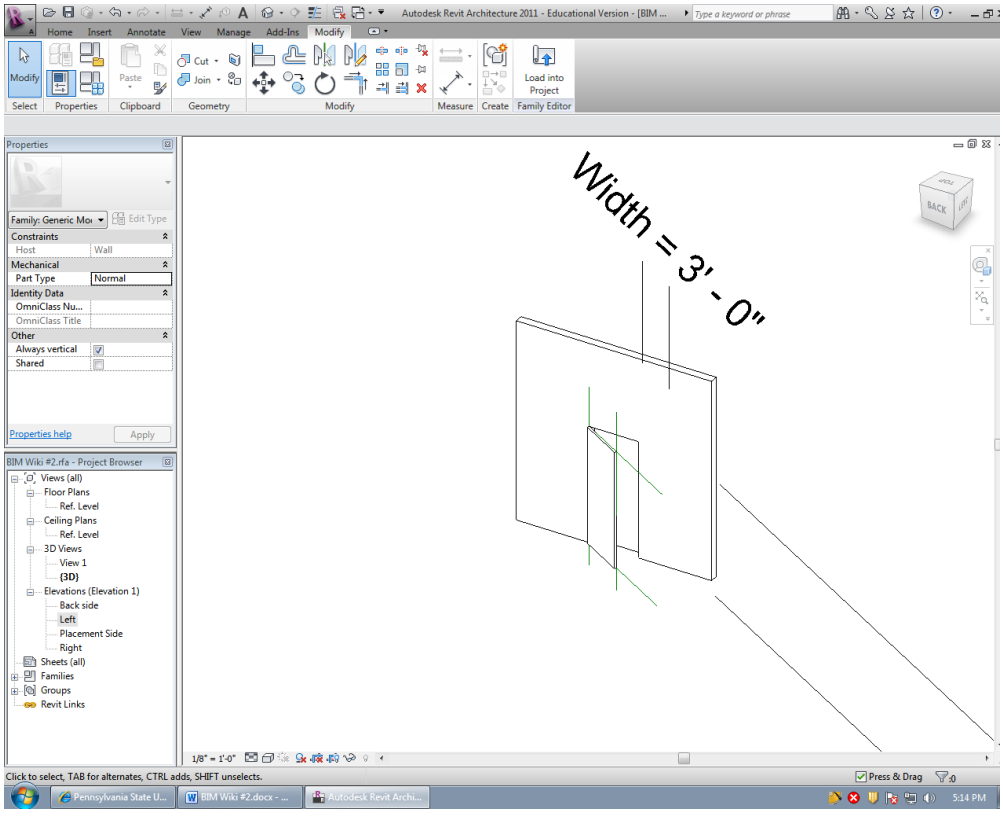


The following dialog box will appear



You can add new sizes of door with different dimension for each of the parameters as you wish

I made a 3'x7' door with a 30 degree angle, click new and click ok



We have successfully created a basic door that can be opened and closed as needed

You can load this into any project and place it into any wall